25723 (1997)). All these tests are characterized in that the cells are first, sedimented at a particular time after the induction and washed with a buffer, followed by disruption with a lysis buffer for the caspases, which had previously been present in the interior of the cell, to be able to convert the added substrate.

IN THE CLAIMS

Cancel claims 1-11, without prejudice or disclaimer, and add the following claims.

12. A method for determining the chemosensivity of cells towards at least one substance by measuring the apoptosis induced by said at least one substance, wherein the apoptosis is determined from the accumulated caspase activity of a sample comprising cells and a medium by adding said at least one substance to the sample followed by incubation, and measuring the accumulated caspase activity in the sample upon disruption of the cells without previously separating off the cells and, thereby, determining the chemosensitivity of the cells.

13. The method according to claim 12, wherein said cells are animal, including human, cells.

14. The method of claim 13, wherein the cells are leukemia cells, cells of solid tumors, cells of pathological organs, and /or reference cells.

15. The method of claim 14, wherein the reference cells are cells from organs other than the pathological ones, or cells from healthy regions of pathological organs.

16. The method according to claim 12, characterized in that pharmaceutically active substances selected from the group consisting of chemotherapeutic agents, environmental pollutants, peptides, nucleic acids and derivatives thereof, PNAs, and nucleic acid hybrides are employed as said substances.

17. The method according to claim 12, wherein the caspase activity is measured through the substrate turnover rate of fluorogenic or chromogenic substrates, or through the binding of specific markers.

18. The method of claim 17, wherein the specific markers comprise antibodies, F_{ab} fragments, single-chain antibodies, aptamers (structure-binding nucleic acids), or other proteins having binding sites for either unchanged (educts) or converted (products) capase-substrates.

19. The method according to claim 18, characterized in that said specific marker further comprises a dye portion, a colloidal precious metal, a radioactive isotope, or a rate-earth-metal chelate.

20. The method according to claim 12, wherein the accumulated caspase activity is measured no sooner than 10 h after said at least one substance has been added to the sample.

21. The method of claim 20, wherein no sooner than 10 h is 24 to 28 h.

22. The method according to claim 12, wherein the caspase activity measured is standardized for the total number of the cells.

23. In a method for the stratification of tumor diseases, for developing new chemotherapies of tumor diseases, or for the optimization of an individual chemotherapy against tumor diseases, said method comprising determining the chemosensivity of tumor cells toward a substance, the improvement comprising determining the chemosensivity by the method of claim 12.

24. A kit comprising a) a sample support with sample compartments, each sample compartment containing b) at least one substance and c) a solution of a reagent standardized for a total number of cells for measuring caspase activity.